

WHAT IS CLAIMED IS:

1. A portable hand holdable electric cigarette lighter, comprising:
  - (a) an electrical resistance heating element contactable by a cigarette, for lighting said cigarette;
  - (b) an electromechanical circuit operatively connected to said heating element and connectable to an externally located alternating current power supply providing a primary voltage of about 110 volts or about 220 volts, said electromechanical circuit includes a step-down voltage transformer for transforming said primary voltage to a secondary voltage in a range of between about 0.5 volts and about 25 volts, such that said electromechanical circuit transmits electrical power having said secondary voltage to said heating element for said lighting; and
  - (c) a portable hand holdable housing for housing said heating element and said electromechanical circuit.
2. The portable hand holdable electric cigarette lighter of claim 1, wherein said heating element is supported by non-conductive support elements which are part of or attached to said portable hand holdable housing.
3. The portable hand holdable electric cigarette lighter of claim 1, wherein said electromechanical circuit includes an actuating mechanism which actuates heating of said heating element.
4. The portable hand holdable electric cigarette lighter of claim 3, wherein said actuating mechanism is a finger activatable / thermally responsive finger deactivatable electromechanical mechanism, activated by press of a finger and deactivated by release of said pressed finger in response to visual detection of an increase in temperature of said heating element to a cigarette lighting temperature of at least about 500 °C.

5. The portable hand holdable electric cigarette lighter of claim 4, wherein said actuating mechanism includes (1) a double-pole contactor switch assembly, and (2) a finger pressible / releasable rod or bar assembly.

6. The portable hand holdable electric cigarette lighter of claim 3, wherein said actuating mechanism is a finger activatable / thermally responsive automatically deactivatable electromechanical mechanism, activated by press of a finger and automatically deactivated in response to an increase in temperature of said heating element to a pre-determined threshold cigarette lighting temperature of at least about 500 °C.

7. The portable hand holdable electric cigarette lighter of claim 6, wherein said actuating mechanism includes (1) a finger pressible and removable contacting assembly, contactable with (2) an automatic thermally expandable and releasable contacting assembly.

8. The portable hand holdable electric cigarette lighter of claim 7, wherein said finger pressible removable contacting assembly includes a longitudinally movable inner assembly having a first end portion positioned inside of a longitudinally movable outer assembly.

9. The portable hand holdable electric cigarette lighter of claim 1, wherein wires lead from a pair of input conductive contact points of said step-down voltage transformer, pass through ports or openings of said portable hand holdable housing, and are operatively connectable to said externally located alternating current power supply.

10. The portable hand holdable electric cigarette lighter of claim 9, wherein said externally located alternating current power supply is a wall electrical outlet.

11. The portable hand holdable electric cigarette lighter of claim 9, wherein said wires passing through said ports or openings of said portable hand holdable housing, are plugged directly into a wall electrical outlet.

12. The portable hand holdable electric cigarette lighter of claim 1, wherein ranges of values of geometrical dimensions of length, height, and width or depth, of said portable hand holdable housing are between about 5 cm and about 20 cm, between about 4 cm and about 15 cm, and between about 5 cm and about 15 cm, respectively.

13. The portable hand holdable electric cigarette lighter of claim 1, wherein values of geometrical dimensions of length, height, and width or depth, of said portable hand holdable housing are about 14 cm, about 8 cm, and about 10 cm, respectively.

14. The portable hand holdable electric cigarette lighter of claim 1, wherein said heating element receives and handles a voltage of between about 0.5 volts and about 25 volts, and a current of up to about 10 amps.

15. The portable hand holdable electric cigarette lighter of claim 1, wherein said heating element is stable when heated to a temperature of at least about 500 °C within a time span of less than about one minute.

16. The portable hand holdable electric cigarette lighter of claim 1, wherein said heating element is made of a material selected from the group consisting of a pure metal, a metal alloy of at least two said pure metals, an electrically conductive graphite material, an electrically conductive ceramic material, an electrically conductive composite material, and a combination thereof.

17. A portable hand holdable electric cigarette lighter, comprising:
- (a) an electrical resistance heating element contactable by a cigarette, for lighting said cigarette;
  - (b) a built-in internally located direct current power supply for supplying electrical power;
  - (c) an electromechanical circuit operatively connected to said heating element and said power supply, for transmitting said electrical power from said power supply to said heating element for said lighting; and

- (d) a portable hand holdable housing for housing said heating element, said power supply, and said electromechanical circuit.

18. The portable hand holdable electric cigarette lighter of claim 17, wherein said heating element is supported by non-conductive support elements which are part of or attached to said portable hand holdable housing.

19. The portable hand holdable electric cigarette lighter of claim 17, wherein said electromechanical circuit includes an actuating mechanism which actuates heating of said heating element.

20. The portable hand holdable electric cigarette lighter of claim 19, wherein said actuating mechanism is a finger activatable / thermally responsive finger deactivatable electromechanical mechanism, activated by press of a finger and deactivated by release of said pressed finger in response to visual detection of an increase in temperature of said heating element to a cigarette lighting temperature of at least about 500 °C.

21. The portable hand holdable electric cigarette lighter of claim 20, wherein said actuating mechanism includes (1) a double-pole contactor switch assembly, and (2) a finger pressible / releasable rod or bar assembly.

22. The portable hand holdable electric cigarette lighter of claim 19, wherein said actuating mechanism is a finger activatable / thermally responsive automatically deactivatable electromechanical mechanism, activated by press of a finger and automatically deactivated in response to an increase in temperature of said heating element to a pre-determined threshold cigarette lighting temperature of at least about 500 °C.

23. The portable hand holdable electric cigarette lighter of claim 22, wherein said actuating mechanism includes (1) a finger pressible and removable contacting assembly, contactable with (2) an automatic thermally expandable and releasable contacting assembly.

24. The portable hand holdable electric cigarette lighter of claim 23, wherein said finger pressible removable contacting assembly includes a longitudinally movable inner assembly having a first end portion positioned inside of a longitudinally movable outer assembly.

25. The portable hand holdable electric cigarette lighter of claim 17, wherein said internal direct current power supplies said electrical power having a voltage in a range of between about 0.5 volts and about 25 volts, for heating said heating element to a cigarette lighting temperature at least about 500 °C.

26. The portable hand holdable electric cigarette lighter of claim 17, wherein said internal direct current power supply is selected from the group consisting of one or more disposable batteries, one or more rechargeable batteries, and an electromagnetic direct current generator.

27. The portable hand holdable electric cigarette lighter of claim 17, wherein said internal direct current power supply is one or more disposable batteries.

28. The portable hand holdable electric cigarette lighter of claim 17, wherein said internal direct current power supply is one or more rechargeable batteries, and said electromechanical circuit additionally includes a battery recharging control unit operatively connected to said one or more rechargeable batteries.

29. The portable hand holdable electric cigarette lighter of claim 28, wherein said battery recharging control unit is operatively connectable to an externally located battery recharging device.

30. The portable hand holdable electric cigarette lighter of claim 17, wherein said internal direct current power supply is one or more rechargeable batteries, and said electromechanical circuit additionally includes a combination of a battery recharging control unit and a battery recharging device operatively connected to said one or more rechargeable batteries.

31. The portable hand holdable electric cigarette lighter of claim 30, wherein said combination of a battery recharging control unit and a battery recharging device is operatively connectable to an externally located alternating current power supply.

32. The portable hand holdable electric cigarette lighter of claim 17, wherein said internal direct current power supply is an electromagnetic direct current generator.

33. The portable hand holdable electric cigarette lighter of claim 17, wherein said internal direct current power supply is an electromagnetic direct current generator, and said electromechanical circuit additionally includes an electromagnetic direct current generator control unit operatively connected to said electromagnetic direct current generator.

34. The portable hand holdable electric cigarette lighter of claim 33, wherein said electromagnetic direct current generator control unit is operatively connectable to an externally located alternating current power supply.

35. The portable hand holdable electric cigarette lighter of claim 17, wherein ranges of values of geometrical dimensions of length, height, and width or depth, of said portable hand holdable housing are between about 1 cm and about 6 cm, between about 5 cm and about 12 cm, and between about 0.5 cm and about 5 cm, respectively.

36. The portable hand holdable electric cigarette lighter of claim 17, wherein values of geometrical dimensions of length, height, and width or depth, of said portable hand holdable housing are about 3 cm, about 8 cm, and about 1.5 cm, respectively.

37. The portable hand holdable electric cigarette lighter of claim 17, wherein said heating element receives and handles a voltage of between about 0.5 volts and about 25 volts, and a current of up to about 10 amps.

38. The portable hand holdable electric cigarette lighter of claim 17, wherein said heating element is stable when heated to a temperature of at least about 500 °C within a time span of less than about one minute.

39. The portable hand holdable electric cigarette lighter of claim 17, wherein said heating element is made of a material selected from the group consisting of a pure metal, a metal alloy of at least two said pure metals, an electrically conductive graphite material, an electrically conductive ceramic material, an electrically conductive composite material, and a combination thereof.